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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,936	08/28/2003	Kikuo Hayashi	991334	6093

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WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP  
1250 CONNECTICUT AVENUE, NW  
SUITE 700  
WASHINGTON, DC 20036

EXAMINER
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ZHU, JERRY

ART UNIT	PAPER NUMBER
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2129

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/649,936	<b>Applicant(s)</b> HAYASHI ET AL.	
	<b>Examiner</b> Jerry Zhu	<b>Art Unit</b> 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. §101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

the invention as disclosed in claims 29-61 is directed to non-statutory subject matter.

2. None of the claims is limited to practical applications in the technological arts.

Examiner finds that *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994)

controls the 35 USC §101 issues on that point for reasons made clear by the Federal

Circuit in *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447 (Fed. Cir.

1999). Specifically, the Federal Circuit held that the act of:

...[T]aking several abstract ideas and manipulating them together adds nothing to the basic equation. *AT&T v. Excel* at 1453 quoting *In re Warmerdam*, 33 F.3d 1354, 1360 (Fed. Cir. 1994).

Examiner finds that Applicant's "structure" references are just such abstract ideas.

3. Examiner bases his position upon guidance provided by the Federal Circuit in *In re Warmerdam*, as interpreted by *AT&T v. Excel*. This set of precedents is within the same line of cases as the *Alappat-State Street Bank* decisions and is in complete agreement with those decisions. *Warmerdam* is consistent with *State Street's* holding that:

Today we hold that *the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price*, constitutes a practical application of a mathematical algorithm, formula, or calculation because it produces "a useful, concrete and tangible result" -- *a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.* (emphasis added) *State Street Bank* at 1601.

4. True enough, that case later eliminated the "business method exception" in order to show that business methods were not per se nonstatutory, but the court clearly *did not* go so far as to make business methods *per se statutory*. A plain reading of the excerpt above shows that the Court was *very specific* in its definition of the new *practical application*. It would have been much easier for the court to say that "business methods were per se statutory" than it was to define the practical application in the case as "...the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price..."

5. The court was being very specific.

6. Additionally, the court was also careful to specify that the "useful, concrete and tangible result" it found was "a final share price momentarily fixed for recording purposes and even accepted and relied upon by regulatory authorities and in subsequent trades." (i.e. the trading activity is the further practical use of the real world monetary data beyond the transformation in the computer - i.e., "post-processing activity".)

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7. Applicant cites no such specific results to define a useful, concrete and tangible result. Neither does Applicant specify the associated practical application with the kind of specificity the Federal Circuit used.
8. Furthermore, in the case *In re Warmerdam*, the Federal Circuit held that:

...[T]he dispositive issue for assessing compliance with Section 101 in this case is whether the claim is for a process that goes beyond simply manipulating 'abstract ideas' or 'natural phenomena' ... As the Supreme Court has made clear, '[a]n idea of itself is not patentable, ... taking several abstract ideas and manipulating them together adds nothing to the basic equation.' *In re Warmerdam* 31 USPQ2d at 1759 (emphasis added).

9. Since the Federal Circuit held in *Warmerdam* that this is the “dispositive issue” when it judged the usefulness, concreteness, and tangibility of the claim limitations in that case, Examiner in the present case views this holding as the dispositive issue for determining whether a claim is “useful, concrete, and tangible” in similar cases. Accordingly, the Examiner finds that Applicant manipulated a set of abstract “structure” to solve purely algorithmic problems in the abstract (i.e., what *kind* of “structure” the invention designs? Algebraic structure? Semantic structure? Musical structure? Physical layout structure?) Clearly, a claim for manipulation of “structure” is provably even more abstract (and thereby less limited in practical application) than pure “mathematical algorithms” which the Supreme Court has held are per se nonstatutory - in fact, it *includes* the expression of nonstatutory mathematical algorithms.

10. Since the claims are not limited to exclude such abstractions, the broadest reasonable interpretation of the claim limitations includes such abstractions. Therefore, the claims are impermissibly abstract under 35 U.S.C. 101 doctrine.

11. Since *Warmerdam* is within the *Alappat-State Street Bank* line of cases, it takes the same view of “useful, concrete, and tangible” the Federal Circuit applied in *State Street Bank*. Therefore, under *State Street Bank*, this could not be a “useful, concrete and tangible result”. There is only manipulation of abstract ideas.

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12. The Federal Circuit validated the use of *Warmerdam* in its more recent *AT&T Corp. v. Excel Communications, Inc.* decision. The Court reminded us that:

Finally, the decision in *In re Warmerdam*, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) is not to the contrary. \*\*\* The court found that the claimed process did nothing more than manipulate basic mathematical constructs and concluded that 'taking several abstract ideas and manipulating them together adds nothing to the basic equation'; hence, the court held that the claims were properly rejected under §101 ... Whether one agrees with the court's conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions or discoveries that may be patented under §101. (emphasis added) *AT&T Corp. v. Excel Communications, Inc.*, 50 USPQ2d 1447, 1453 (Fed. Cir. 1999).

13. Remember that in *In re Warmerdam*, the Court said that this was the dispositive issue to be considered. In the *AT&T* decision cited above, the Court reaffirms that this is the issue for assessing the “useful, concrete, and tangible” nature of a set of claims under 101 doctrine. Accordingly, Examiner views the *Warmerdam* holding as the dispositive issue in this analogous case.

14. The fact that the invention is merely the manipulation of *abstract ideas* is clear. The data referred to by Applicant's phrase “structure” is simply an abstract construct that does not limit the claims to the transformation of real world data (such as monetary data or heart rhythm data) by some disclosed process. Consequently, the necessary conclusion under *AT&T*, *State Street* and *Warmerdam*, is straightforward and clear. The claims take several abstract ideas (i.e., “structure” in the abstract) and manipulate them together adding nothing to the basic equation. Claims 29-61 are, thereby, rejected under 35 U.S.C. 101.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 29-61 are rejected under 35 USC 112, first paragraph because current case law (and accordingly, the MPEP) require such a rejection if a 101 rejection is given because when Applicant has not in fact disclosed the practical application for the invention, as a matter of law there is no way Applicant could have disclosed *how* to practice the *undisclosed* practical application. This is how the MPEP puts it:

("The how to use prong of section 112 **incorporates as a matter of law** the requirement of 35 U.S.C. 101 that the specification disclose as a matter of fact a practical utility for the invention.... If the application fails as a matter of fact to satisfy 35 U.S.C. § 101, then the application also fails as a matter of law to enable one of ordinary skill in the art to use the invention under 35 U.S.C. § 112."; In re Kirk, 376 F.2d 936, 942, 153 USPQ 48, 53 (CCPA 1967) ("Necessarily, compliance with § 112 requires a description of how to use presently useful inventions, **otherwise an applicant would anomalously be required to teach how to use a useless invention.**"). See, MPEP 2107.01(IV), quoting In re Kirk (emphasis added).

Therefore, claims 29-61 are rejected on this basis.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



15. Claims 29-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Rostoker. Specifically:

**Claims 29-30**

16. Rostoker teaches a genetic design method executable on a computer (col.13, lin.38-41; col.33, lin.39-44. The design method is the method of circuit design using genetic algorithm. The processors could be located in one or more computers) comprising:

- Selecting a parent profile representing an outline for design of a structure (col.33, lin.47-48. It does not exclude the possibility of the population having only one individual representation that is the circuit design layout.)
- Dividing the parent profile into segments, each of the segments having at least one dimensional characteristic. (col.34, lin.2; col.2, lin.20-26. Randomly transposing cells in circuit design requires dividing cells into blocks or segments and each block has dimensional characteristics such as size and location)
  - i. (claim 30) the segments can be represented as curves and lines of contours of externally visible components (col.2, lin.58-65; the visible components are blocks that occupy physical space and have curves and lines)
- Evolving the parent profile using a genetic algorithm to produce an offspring profile (col.34, lin.1-3, the new placement, or new circuit layout, is the new or

offspring profile where there is at least on cell or block are changed hence change the corresponding dimensional characteristics)

### **Claims 31-36**

17. The following relates to physical circuit partitioning into the cells, segments and groups of different levels of detail and their relational characteristics pertaining to different partitioning levels and scope such as local and global level. The ways of partitioning the elements and establishing corresponding relations are numerous and hence is design choice that can be in many alternatives. Therefore the following claims are rejected on the basis of design choice as well as inherencies. (col.2, lin.38-67; col.2-4, all line numbers)

- (claim 31) A profile (partial circuit design layout) has dimensional characteristics pertaining to the overall profile (overall circuit layout). (It is inherent that any part of circuit physical layout has dimensional characteristics pertaining to the geometrics of overall circuit layout.) (It is also anticipated at col.3, lin.8-12)
- (claim 32) A profile (circuit layout) includes level of detail of circuit partitioning (col.2, lin.58-66)
- (claim 33-34) A profile (circuit layout) includes a grouping of segments and the grouping includes at least one dimensional characteristic pertaining the grouping (Col.2, lin.54-67; col.3, lin.1-16; It is inherent that the grouping has dimensional or geometrical characteristics)

- (claim 35) A profile (circuit layout) includes at least two groupings of segments of at least two cells and a relational parameter pertaining to a relationship between at least two groupings (col.2, lin.54-67; col.3, lin.1-7)
- (claim 36) A profile (circuit layout) includes a relationship between at least two segments. The relationship includes a radius parameter. (It is inherent that two segments are geometrically related. col.3, lin.22-29)

### **Claims 38-43**

18. The following items relate to displaying the circuit design layouts or profiles and generation relationships between profiles. There are numerous ways to display them and it is easy to choose alternative ways without adding new subject matter. Since the method uses a computer it is inherent as well as design choice to display the design steps and results and they are anticipated at (Figure 13-28 and Section 3 Integrated Circuit Cell Placement Representation. col.7, lin.56-67; col.8, lin1-67; col.9, lin.1-4; col.14, lin56-67; col.15, lin.1-7, col.26-33, lin.14-35)
- (claim 38-9) Displaying at least one profile as well as at different levels of detail (col.1, lin.46-52)
  - (claim 40) Displaying a grouping (col.26-33, lin.14-35)
  - (claim 41-2) Generating family tree of identifying successive generations of parents and offspring and displaying the parent/offspring profile and family tree (col.26, lin.54-59)

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- (claim 43) Display at least one profile as three-dimensional image (col.29, lin.59-64)

### **Claims 44-51**

19. The following items relate to modifying the profiles of partitions of elements and their relationships to produce offspring profiles. There are numerous ways to the modification and it is easy to choose alternative ways without adding new subject matter. They are design choice and anticipated at (col.15, lin.58-67; col.16, lin.1-67; col.17, lin.1-14; col.45, lin.54-67; col.46-49, lin.1-67)

- (claim 44-5) modifying at least one dimensional characteristics for the segment(s) and pertaining to the overall profile (col.15, lin.58-67; col.16, lin.1-57)
- (claim 46-7) modifying at least one profile to identify a grouping of segments and specifying at least one dimensional characteristic pertaining to the grouping (col.45, lin.54-67; col.46-49, lin.1-67)
- (claim 48) modifying dimensional characteristics pertaining to the grouping col.45, lin.54-67; col.46-49, lin.1-67)
- (claim 49) modifying at least one profile to identify at least two groupings of segments and specifying a relational parameter pertaining to a relationship between at least two groupings (col.45, lin.54-67; col.46-49, lin.1-67)
- (claim 50) modifying the relational parameter pertaining to the relationship between at least two groupings (col.45, lin.54-67; col.46-49, lin.1-67)

- (claim 51) modifying the relationship between at least two segments (col.45, lin.54-67; col.46-49, lin.1-67)

### **Claims 52-61**

20. The following items relate to what segments or groupings are isolated from changing and what segments or groupings are evolving. Again, there are numerous ways to isolate and evolve different part of the profile. They are design choice and it is easy to choose alternative ways without adding new subject matter. They are rejected on this basis alone. They are anticipated at (col.15, lin.30-47; the cells are selected to change or not to change; col.15, lin.25-57; the windows are groupings that are selected to evolve or not to evolve. This selection is done by algorithm and easily implemented to be selected by a user. Col.34-38, all lines.)

- (claim 52) Isolates at least one segment of the parent profile from change (col.37, lin.36-39)
- (claim 53) Isolates at least one dimensional characteristic pertaining to the overall profile from change (It is inherent that some dimensional characteristics do not change when some of the segments do not change.)
- (claim 54) Isolates a grouping from change (Col.33, lin.38; col.34, lin.1-67, col.35, lin.1-41)
- (claim 55-6) evolves segments as well as segments of the grouping selected by the user (Col.33, lin.38; col.34, lin.1-67, col.35, lin.1-41)

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- (claim 57) evolves at least one dimensional characteristic pertaining to the grouping (Col.33, lin.38; col.34, lin.1-67, col.35, lin.1-41)
- (claim 58-9) evolves the relational parameter pertaining to the relationship between at least two groupings as well as two segments (Col.33, lin.38; col.34, lin.1-67, col.35, lin.1-41)
- (claim 60-1) evolving accounts for a user preference to keep a segment(s) as well as the grouping (Col.33, lin.38; col.34, lin.1-67, col.35, lin.1-41)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim 37 is rejected under 35 U. S. C. 103 as being obvious over Rostoker in view of Koza, U.S. Patent No. 5136686 (Koza). Specifically:

### **Claims 37**

1. Rostoker discloses a genetic design method but fails to teach the application to automobile design.

Koza teaches a automobile design as a kind of population where genetic algorithm can be applied.

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One of ordinary skill in the art would have provided the genetic method taught by Roster for the purpose of designing automobile taught by Koza. As a result it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to modify the system taught by Rostoker by adding the automobile design profile as taught by Koza.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"Cell placement alteration apparatus for integrated circuit chip physical design automation system" U.S. Patent #5,557,533

"Computer implemented method for producing optimized cell placement for integrated circuit chip" U.S. Patent #5,636,125

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Zhu whose telephone number is (571) 2724237.

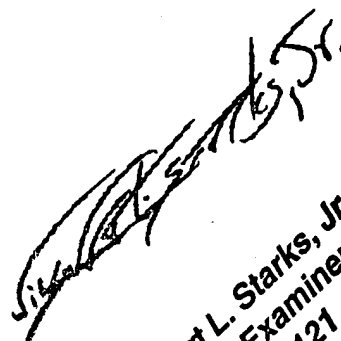
The examiner can normally be reached on 8:30 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jerry Zhu  
Examiner  
Art Unit - 2129  
28 April 2005

A handwritten signature in black ink, appearing to read "Wilbert L. Starks, Jr.", written diagonally across the printed name.

Wilbert L. Starks, Jr.  
Primary Examiner  
Art Unit - 2121